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# *The* **FERTILIZER** SITUATION for 1953-1954



**Commodity Stabilization Service  
United States Department of Agriculture**

**Washington, D.C.**

**November 1953**

## PREFACE

The Fertilizer Situation for 1953-54 is the eleventh in a series of reports on fertilizers issued by agencies within the U. S. Department of Agriculture.

This report has been prepared by the Fertilizer Staff, Mobilization Activities Branch, Commodity Stabilization Service.

In the preparation of the report helpful assistance was given by the Bureau of the Census, Department of Commerce; Bureau of Mines, Department of the Interior; Chemical Division, Business and Defense Services Administration; and the Bureau of Plant Industry, Soils, and Agricultural Engineering, Department of Agriculture. This assistance is gratefully acknowledged.

The preliminary forecast of the 1953-54 fertilizer supply is again being combined with the usual mid-summer tabulation, showing reported deliveries of the three primary plant nutrients during the previous fertilizer year.

It is intended that a supplemental report, reflecting any changes or developments, will be issued at a later date.

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## The Fertilizer Situation for 1953-54

### The 1953-54 Fertilizer Outlook

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The available supply of major plant nutrients reached a new high during the year ended June 30, 1953. In the main, this increased supply was absorbed through consumption channels. The carryover of certain types of material was somewhat higher than a year earlier, but is not of burdensome proportions.

The prices of fertilizers during the 1952-53 fiscal year averaged about 2 percent higher than prevailed in 1951-52. Little changes from present price levels are expected during the coming year.

Preliminary estimates based on current information as to completion of new facilities, and assuming import-export relationships at about current levels, indicate that the aggregate supply of the three major plant nutrients available for the 1953-54 season probably will exceed the record output of 1952-53 by about 11 percent.

Nitrogen (N): The supply of nitrogen (N) available for fertilizer purposes in 1953-54 is currently estimated to slightly exceed two million tons. This is a preliminary estimate based on current information as to when a number of new synthetic ammonia plants are scheduled to be completed, and assumes about the same import-export balance as in 1952-53. This represents an increase of approximately 11.2 percent above the reported 1952-53 supply of 1,804 thousand tons. See tables 1 and 1A for details.

It is estimated that the supply of solid nitrogen materials (dry nitrogen) available for 1953-54 represents approximately 60 percent of the total supply and that solutions and liquid materials (wet nitrogen) 40 percent. For the previous year these percentages, based on trade deliveries, were approximately 62 and 38.

Phosphates ( $P_2O_5$ ): The supply of available phosphates for 1953-54 is presently forecast at 2.667 million tons, available phosphoric oxide ( $P_2O_5$ ) basis as shown in table 2A. This estimate is based on current information with regard to the completion dates of new plants, trends in use, and available production data.



The 1953-54 forecast supply of available phosphoric oxide is about 10.4 percent above the 2.414 million tons which were put into domestic trade channels in 1952-53, according to data now available. Details of the 1952-53 supply are shown in table 2. The new plant capacity scheduled for completion in 1953-54 involves a sizable tonnage of concentrated superphosphate, which should substantially increase the supply of this material in relation to the total quantity of  $P_2O_5$  available in 1953-54.

Potash ( $K_2O$ ): The program to expand the potash production is ahead of schedule. The 1953-54 supply of potash ( $K_2O$ ) available for fertilizer purposes will reflect production from these new facilities as well as increases from older producing units. Considering the possible increase in domestic production, and assuming approximately the same import-export balance as in 1952-53, a 1953-54 supply of 1.941 million tons of potash ( $K_2O$ ) is forecast. This amount is about 11.9 percent above the reported 1952-53 supply of 1.739 million tons. Details are shown in tables 3 and 3A.

### General

#### The Fertilizer Expansion Program:

In order to meet desired levels of crop production in 1954-55, it has been estimated that there will be needed for domestic fertilizer purposes 2.185 million tons of nitrogen (N), 3.485 million tons of available phosphoric oxide ( $P_2O_5$ ), and 2.185 million tons of potash ( $K_2O$ ). In developing the above estimates it was assumed that the consumption ratio of  $P_2O_5$  and  $K_2O$  to N would be reduced from about 1:1.8:1.1 in 1950 to around 1:1.6:1 in 1954-55. It appears at present that the phosphate ratio to nitrogen will drop to 1.3 or 1.4 by 1954-55. The consumption of nitrogen and potash has paralleled fairly closely the Department's estimated requirements, while the consumption of phosphate has lagged behind, causing the consumption ratio to be narrowed faster than expected.

For the purpose of supplying nitrogen, phosphate, and potash for fertilizer and other uses, the Defense Production Administration established goals for the expansion of productive capacity for nitrogen (N), phosphoric oxide ( $P_2O_5$ ), and potash ( $K_2O$ ) by 1,291,000, 1,300,000, and 600,000 tons, respectively, over the January, 1951 levels.

The expansion program includes the construction of new plants as well as additions to existing facilities. The programs as originally set up were to have been completed in 1955. Available information through the Business and Defense Services Administration (formerly NPA) and

USDA channels indicates that the nitrogen and phosphate expansion goals may not be reached before 1956 or later.

On the basis of annual capacities of the facilities completed or scheduled for completion during the next two fiscal years, the approximate capacities that will be installed and the estimated effective new capacity that may be available during each fiscal year, are as follows:

Nitrogen (N)

Year	: Est. effective :		
	: New capacity:	new capacity	: Remaining portion of
	: scheduled for:	available for	: new capacity applicable
	: completion :	year <u>1/</u>	: to succeeding year
1953-54	704,000	274,000	430,000
1954-55	233,000	146,000	87,000

Prior to June 30, 1953 there had been installed new plant capacity equivalent to approximately 283,000 tons of nitrogen per year. This, of course, included Morgantown Ordnance Works which plant was reactivated in 1952. Of the 283,000 tons of capacity completed prior to June 30, 1953 an amount equivalent to about 6,000 tons was carried over into 1953-54. This amount added to the 274,000 tons of effective capacity completed would mean that during 1953-54 there may be as much as 280,000 tons more of nitrogen capacity available than was available in 1952-53. The above figure represents only scheduled capacity that may be available to produce nitrogen for agricultural purposes as well as for defense and industrial uses. Construction schedules are subject to delay and the time of completion of the various units will affect the capacity available in the given fiscal year.

To determine the probable new capacity available in 1954-55, it will be necessary to add the 430,000 carried over from 1953-54 to the 146,000 completed in 1954-55, which makes a total of 576,000 tons.

In addition, plant capacity equivalent to approximately 300,000 tons N in various stages of planning has been proposed for construction after June 30, 1955. Present information indicates that some of the proposed

1/ The effective new capacity is the estimated portion of the annual capacity, based on scheduled completion date, that may be available during the fiscal year. For example, if a plant is completed and begins full operation January 1, it is presumed that one-half of its annual capacity is available during the fiscal year.

units may not be constructed.

The capacities listed above include the nitrogen production units proposed as a part of the nitraphosphate program.

### Phosphates ( $P_2O_5$ )

Year	: Est. effective :		
	: New capacity:	new capacity	: Remaining portion of
	: scheduled for:	available for	: new capacity applicable
	: completion :	year <u>1/</u>	: to succeeding year
1953-54	433,000	188,000	245,000
1954-55	211,000	92,000	119,000

Prior to June 30, 1953 plant capacity, which was considered a part of the expansion program, was completed for the equivalent of approximately 390,000 tons of  $P_2O_5$ . Of this new capacity, approximately 35 percent or 137,000 tons  $P_2O_5$  equivalent will not be available until 1953-54 because of completion dates of producing units. This carryover of capacity and the 188,000 tons of estimated effective new capacity to be completed in 1953-54 give a total of 325,000 tons of  $P_2O_5$  equivalent that could be available in 1953-54. However, present indications are that the 1953-54 supply will not be increased by this amount over 1952-53, as indicated in table 2A.

The 1954-55 probable effective new capacity can be estimated by adding the 245,000 carryover from 1953-54 to the 92,000 tons scheduled for 1954-55, which makes approximately 337,000 tons  $P_2O_5$  equivalent. These figures are subject to construction delays and other factors which may change the completion dates of the individual plants.

There are also in various phases of planning an additional 90,000 tons  $P_2O_5$  equivalent capacity that may be constructed after June 30, 1955.

Only about one-half of the plants that are scheduled for completion in 1954-55, and none of those planned for construction that would be completed after June 30, 1955, had been started as of November 1, 1953.

1/ The effective new capacity is the estimated portion of the annual capacity, based on scheduled completion date, that may be available during the fiscal year. For example, if a plant is completed and begins full operation January 1, it is presumed that one-half of its annual capacity is available during the fiscal year.



## Potash ( $K_2O$ )

The potash production capacity as of June 30, 1953 was reported to be about 2,000,000 tons  $K_2O$  basis. This is sufficient to meet the goal set by the Defense Production Administration, July 22, 1952, to be attained by July 1, 1954. This is an increase in capacity of approximately 600,000 tons  $K_2O$  over January 1, 1951.

In addition, one new shaft is being sunk in the Carlsbad area and two new shafts are contemplated in Lee County, N. Mex., for the near future. Other developments are in the planning and exploratory stages.

The producers operating in the Carlsbad area have doubled their storage facilities during the last two years.

It appears that domestic capacity to produce potash will be sufficient, plus normal imports, to meet agriculture's stated requirements.

Table 1. — 1952-53 FERTILIZER NITROGEN SUPPLY  
Trade Delivery Basis 1/

November, 1953

(In tons of 2,000 pounds nitrogen content)

Source	: Ammonium Nitrate All Grades	: Ammonium Sulfate & Sulfate Nitrate 2/	: Other Solids 3/	: Natural Organics 4/	: Compound Ammoniating Solutions : AN-NH <sub>3</sub> & UAL 5/	: Straight NH <sub>3</sub> for Ammoniation 5/	: Solutions and Liquor for Ammoniation	: Ammonia for Direct Application	: Nitrogen 6/ : Solutions for Direct Application	: Total by Source
<b>U. S. Production</b>										
Synthetic ammonia	258,500	154,600	94,900	—	378,900	75,500	6,000	218,500	16,300	1,203,200
By-product ammonia	—	175,000	—	—	—	—	2,000	3,000	—	180,000
Natural organics	—	—	—	36,000	—	—	—	—	—	36,000
<b>Total</b>	<b>258,500</b>	<b>329,600</b>	<b>94,900</b>	<b>36,000</b>	<b>378,900</b>	<b>75,500</b>	<b>8,000</b>	<b>221,500</b>	<b>16,300</b>	<b>1,419,200</b>
<b>Exports</b>	<b>700</b>	<b>15,300</b>	<b>10,000</b>	<b>1,000</b>	<b>17,000</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>44,000</b>
<b>Net Domestic Production</b>	<b>257,800</b>	<b>314,300</b>	<b>84,900</b>	<b>35,000</b>	<b>361,900</b>	<b>75,500</b>	<b>8,000</b>	<b>221,500</b>	<b>16,300</b>	<b>1,375,200</b>
<b>Imports</b>	<b>170,800</b>	<b>87,200</b>	<b>165,800</b>	<b>5,000</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>428,800</b>
<b>Total Supply - U. S. and Possessions</b>	<b>428,600</b>	<b>401,500</b>	<b>250,700</b>	<b>40,000</b>	<b>361,900</b>	<b>75,500</b>	<b>8,000</b>	<b>221,500</b>	<b>16,300</b>	<b>1,804,000</b>

1/ Based upon special reports from primary producers of synthetic ammonia, importers and other sources; data for by-product compounds based upon Bureau of Mines' Monthly Coke Report. Correlation with Bureau of Census' Facts for Industry and Import and Export Tabulations in process and some adjustments may be made when all data are appraised: hence preliminary designation as of this date; as a result of available tests, it is believed that data presented represent reasonably correct proximates (proximity estimates). To avoid disclosure of individual company operations certain designated materials have been combined.

2/ Includes estimated ammonium sulfate content of imported and exported mixed fertilizers.

3/ Includes estimated ammonium phosphates, sodium nitrate, urea mixtures, calcium nitrate and cyanamid.

4/ Estimated nitrogen content of natural organics used in commercial fertilizer.

5/ Includes estimated nitrogen content derived from solutions and ammonia in exported ammoniated superphosphates and mixed fertilizers.

6/ Includes compound nitrogen solutions, ammonium nitrate solutions and small quantity of aqua ammonia used for this purpose.

November, 1953

Table 1A. — ESTIMATED 1953-54 FERTILIZER NITROGEN SUPPLY

(In tons of 2,000 pounds nitrogen (N))

Source	U. S. Production									
	Ammonium : Ammonium	Nitrate : Sulfate &	Other : Natural	Compound : Ammoniating	Straight : Solutions	Nitrogen 5/ :	Ammonia : Solutions			
	Ammonium	Ammonium	Solids	Organics	AN-NH <sub>2</sub> & UAL	Ammoniation : Liquor	for : Direct	for : Direct	for : Direct	Application : Application
	1/ : Nitrate	2/ : Sulfate	3/ : Organics	4/ : AN-NH <sub>2</sub> & UAL	5/ : Nitrogen	6/ : Ammonia	7/ : Ammonia	8/ : Ammonia	9/ : Ammonia	10/ : Ammonia
Synthetic ammonia	280,000	160,000	145,000	--	425,000	95,000	5,000	265,000	25,000	1,400,000
By-product ammonia	--	182,000	--	--	--	3,000	--	--	--	185,000
Natural organics	--	--	--	35,000	--	--	--	--	--	35,000
Total	280,000	342,000	145,000	35,000	425,000	95,000	8,000	265,000	25,000	1,620,000
Exports	1,000	15,000	10,000	1,000	17,000	--	--	--	--	44,000
Net Domestic Production	279,000	327,000	135,000	34,000	408,000	95,000	8,000	265,000	25,000	1,576,000
Imports	171,000	88,000	166,000	5,000	--	--	--	--	--	430,000
Total Supply - U. S.	450,000	415,000	301,000	39,000	408,000	95,000	8,000	265,000	25,000	2,006,000

For the purpose of this tabulation, the following groupings have been made:

- 1/ Includes estimated ammonium sulfate content of imported and exported mixed fertilizers.  
 2/ Includes estimated ammonium phosphates, sodium nitrate, urea mixtures, calcium nitrate, cyanamid and nitrates.  
 3/ Estimated nitrogen content of natural organics used in commercial fertilizer.  
 4/ Includes estimated nitrogen content derived from solutions and ammonia in exported ammoniated superphosphates and mixed fertilizers.  
 5/ Includes compound nitrogen solutions, ammonium nitrate solutions and aqueous ammonia used for this purpose.

Table 1. -- 1952-53 FERTILIZER NITROGEN SUPPLY  
Trade Delivery Basis 1/

November, 1953

(In tons of 2,000 pounds nitrogen content)

Source	: Ammonium Nitrate All Grades	: Ammonium Sulfate & Sulfate Nitrate 2/	: Other Solids 3/	: Natural Organics 4/	: Compound Ammoniating Solutions : AN-NH <sub>3</sub> & UAL: 5/	: Straight NH <sub>3</sub> for Ammoniation: 5/	: Solutions and Liquor for Application:	: Ammonia for Direct Application:	: Nitrogen 6/	: Total by Source
<u>U. S. Production</u>										
Synthetic ammonia	258,500	154,600	94,900	--	378,900	75,500	6,000	218,500	16,300	1,203,200
By-product ammonia	--	175,000	--	--	--	--	2,000	3,000	--	180,000
Natural organics	--	--	--	36,000	--	--	--	--	--	36,000
Total	258,500	329,600	94,900	36,000	378,900	75,500	8,000	221,500	16,300	1,419,200
<u>Exports</u>	700	15,300	10,000	1,000	17,000	--	--	--	--	44,000
<u>Net Domestic Production</u>	257,800	314,300	84,900	35,000	361,900	75,500	8,000	221,500	16,300	1,375,200
<u>Imports</u>	170,800	87,200	165,800	5,000	--	--	--	--	--	428,800
<u>Total Supply - U. S. and Possessions</u>	428,600	401,500	250,700	40,000	361,900	75,500	8,000	221,500	16,300	1,804,000

1/ Based upon special reports from primary producers of synthetic ammonia, importers and other sources; data for by-product compounds based upon Bureau of Mines' Monthly Coke Report. Correlation with Bureau of Census' Facts for Industry and Import and Export Tabulations in process and some adjustments may be made when all data are appraised: hence preliminary designation as of this date; as a result of available tests, it is believed that data presented represent reasonably correct proximates (proximity estimates). To avoid disclosure of individual company operations certain designated materials have been combined.

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3/ Includes estimated ammonium phosphates, sodium nitrate, urea mixtures, calcium nitrate and cyanamid.

4/ Estimated nitrogen content of natural organics used in commercial fertilizer.

5/ Includes estimated nitrogen content derived from solutions and ammonia in exported ammoniated superphosphates and mixed fertilizers.

6/ Includes compound nitrogen solutions, ammonium nitrate solutions and small quantity of aqua ammonia used for this purpose.



Table 1A. — ESTIMATED 1953-54 FERTILIZER NITROGEN SUPPLY

November, 1953

(In tons of 2,000 pounds nitrogen (N))

Source	: Ammonium : Nitrate : All : Grades :	: Ammonium : Sulfate & : Ammonium : Sulfate : Nitrate 1/	: : Other : Solids : 2/	: : Natural : Organics : 3/	: Compound : Ammoniating : Solutions : AN-NH <sub>3</sub> & UAL : 4/	: Straight : NH <sub>3</sub> for : Ammoniation : 4/	: Solutions : and : Liquor : for : Ammoniation	: Nitrogen 5/ : Ammonia : for : Direct	: Solutions : for : Direct	: Total : by : Source
<u>U. S. Production</u>										
Synthetic ammonia	280,000	160,000	145,000	--	425,000	95,000	5,000	265,000	25,000	1,400,000
By-product ammonia	--	182,000	--	--	--	--	3,000	--	--	185,000
Natural organics	--	--	--	35,000	--	--	--	--	--	35,000
Total	280,000	342,000	145,000	35,000	425,000	95,000	8,000	265,000	25,000	1,620,000
<u>Exports</u>	1,000	15,000	10,000	1,000	17,000	--	--	--	--	44,000
<u>Net Domestic</u>										
Production	279,000	327,000	135,000	34,000	408,000	95,000	8,000	265,000	25,000	1,576,000
<u>Imports</u>	171,000	88,000	166,000	5,000	--	--	--	--	--	430,000
<u>Total Supply - U. S.</u>										
and Possessions	450,000	415,000	301,000	39,000	408,000	95,000	8,000	265,000	25,000	2,006,000

For the purpose of this tabulation, the following groupings have been made:

- 1/ Includes estimated ammonium sulfate content of imported and exported mixed fertilizers.
- 2/ Includes estimated ammonium phosphates, sodium nitrate, urea mixtures, calcium nitrate, cyanamid and nitraphosphates.
- 3/ Estimated nitrogen content of natural organics used in commercial fertilizer.
- 4/ Includes estimated nitrogen content derived from solutions and ammonia in exported ammoniated superphosphates and mixed fertilizers.
- 5/ Includes compound nitrogen solutions, ammonium nitrate solutions and aqua ammonia used for this purpose.

November, 1953

Table 2. -- PHOSPHATE: 1952-53 supply for fertilizer purposes,  
United States and possessions. (Trade delivery basis)

(In tons of 2,000 pounds available phosphoric oxide ( $P_2O_5$ ))

	: Normal :superphosphate :	: Concentrated :superphosphate :	: Other <u>1/</u> : :	: Total by source : :
<u>U. S. production</u>	1,762,000 <u>2/</u>	475,000	210,000	2,447,000
<u>Exports</u>	56,000	10,000	8,000 <u>3/</u>	74,000
Net supply, U. S. production	1,706,000	465,000	202,000	2,373,000
<u>Imports</u>	1,000	2,000	38,000 <u>3/</u>	41,000
Total supply, U. S. and possessions	1,707,000	467,000	240,000	2,414,000

1/ Includes estimates for complex phosphatic materials.

2/ Includes wet-base goods.

3/ Includes  $P_2O_5$  content of prepared phosphatic mixtures, ammonium phosphates and ammoniated superphosphates.

November, 1953

Table 2A. --PHOSPHATE: Estimated 1953-54 supply for fertilizer purposes,  
United States and possessions

(In tons of 2,000 pounds available phosphoric oxide (P<sub>2</sub>O<sub>5</sub>))

Source	: Normal : superphosphate	: Concentrated : superphosphate	: Other <u>1/</u> :	: Total by source
<u>U. S. production</u>	1,800,000 <u>2/</u>	650,000	250,000	2,700,000
<u>Exports</u>	54,000	10,000	10,000 <u>3/</u>	74,000
New supply, U. S. production	1,746,000	640,000	240,000	2,626,000
<u>Imports</u>	1,000	2,000	38,000 <u>3/</u>	41,000
Total supply, U.S. and possessions	1,747,000	642,000	278,000	2,667,000

1/ Includes estimates for complex phosphatic materials.

2/ Includes wet-base goods.

3/ Includes P<sub>2</sub>O<sub>5</sub> content of prepared phosphatic mixtures, ammonium phosphates and ammoniated superphosphates.

November, 1953

Table 3. -- POTASH: 1952-53 supply for fertilizer purposes,  
United States and possessions. (Trade delivery basis)

(In tons of 2,000 pounds potassium oxide (K<sub>2</sub>O) content)

Source	:Muriate of : potash :60% and 50% grade:	:Sulfate of potash: : & sulfate of : potash magnesia :	:Manure : : salts:	:Miscellaneous & by- : product materials : : 1/	: Total : by : Source
Deliveries from U.S. Production	1,503,000	93,000	2,000	36,000	1,634,000
<u>Exports</u>	44,000	6,000	--	4,000	54,000
Net supply - U.S. production	1,459,000	87,000	2,000	32,000	1,580,000
<u>Imports</u>	131,000	17,000	--	11,000	159,000
Total supply, U.S. and possessions	1,590,000	104,000	2,000	43,000	1,739,000

1/ Includes potash content of oilseed meal and by-product residues used for fertilizer, potassium nitrate, and calculated potash content of mixed fertilizers, exported and imported.



November, 1953

Table 3A -- POTASH: Estimated 1953-54 supply for fertilizer purposes,  
United States and possessions

(In tons of 2,000 pounds potassium oxide (K<sub>2</sub>O) content)

Source	:Muriate of : potash :60% and 50% grade	:Sulfate of potash: :& sulfate of :potash magnesia	: Misc. & by- :Manure: product :Salts : materials <u>1/</u> :	: Total by : source	
Deliveries from U.S. production	1,700,000	97,000	2,000	37,000	1,836,000
<u>Exports</u>	44,000	6,000	---	4,000	54,000
Net supply = U. S. production	1,656,000	91,000	2,000	33,000	1,782,000
<u>Imports</u>	131,000	17,000	---	11,000	159,000
Total supply, U.S. and possessions	1,787,000	108,000	2,000	44,000	1,941,000

1/ Includes potash content of oilseed meal and by-product residues used for fertilizer, potassium nitrate and calculated potash content of mixed fertilizers, exported and imported.

Table 4. - Commercial fertilizers and primary plant nutrients consumed in the United States and Territories, 1900-1952

Calendar year	Fertilizers <sup>1/</sup> 1,000 S/T	Plant-nutrient content							
		Available			Total		Plant-nutrient ratio		
		Nitrogen (N) 1,000 S/T	phosphoric oxide (P <sub>2</sub> O <sub>5</sub> ) 1,000 S/T	Potash (K <sub>2</sub> O) 1,000 S/T	Quantity 1,000 S/T	Proportion percent	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O
1900	2,730	62	246	86	394	14.4	1	4.0	1.4
1910	5,547	146	499	211	856	15.4	1	3.4	1.4
1920	7,296	228	660	258	1,146	15.7	1	2.9	1.1
1924	6,999	252	630	259	1,141	16.3	1	2.5	1.0
1928	8,215	342	776	333	1,451	17.7	1	2.3	1.0
1929	8,208	352	774	338	1,464	17.8	1	2.2	1.0
1930	8,425	377	793	354	1,524	18.1	1	2.1	0.9
1931	6,541	301	611	275	1,187	18.1	1	2.0	0.9
1932	4,545	214	413	192	819	18.0	1	1.9	0.9
1933	5,110	240	464	222	926	18.1	1	1.9	0.9
1934	5,794	275	530	263	1,068	18.4	1	1.9	1.0
1935	6,534	312	597	307	1,216	18.6	1	1.9	1.0
1936	7,222	350	673	350	1,373	19.0	1	1.9	1.0
1937	8,433	412	794	416	1,622	19.2	1	1.9	1.0
1938	7,758	384	744	393	1,521	19.6	1	1.9	1.0
1939	7,993	398	789	409	1,596	20.0	1	2.0	1.0
1940	8,656	419	912	435	1,766	20.4	1	2.2	1.0
1941	9,607	458	994	467	1,919	20.0	1	2.2	1.0
1942	10,331	409	1,131	547	2,087	20.2	1	2.3	1.3
1943	11,734	509	1,237	643	2,389	20.4	1	2.4	1.3
1944	13,330	635	1,405	649	2,689	20.2	1	2.2	1.0
1945	13,988	641	1,435	752	2,828	20.2	1	2.2	1.2
1946	16,087	759	1,671	854	3,284	20.4	1	2.2	1.1
1947	17,398	836	1,775	879	3,490	20.1	1	2.1	1.1
1948	17,596	841	1,843	956	3,640	20.7	1	2.2	1.1
1949	17,927	912	1,884	1,064	3,860	21.5	1	2.1	1.2
1950	19,758	1,126	2,073	1,215	4,414	22.3	1	1.8	1.1
1951	21,054	1,265	2,090	1,413	4,768	22.6	1	1.7	1.1
1952 <sup>2/</sup>	22,700	1,430	2,225	1,589	5,244	23.1	1	1.6	1.1

<sup>1/</sup> Includes fertilizers distributed by Government agencies; phosphate rock, gypsum, and sulfur for direct application to the soil; trace-element fertilizers such as borax and copper, manganese, and zinc compounds; and other plant-nutrient materials. Does not include liming material.

<sup>2/</sup> Preliminary.

Table 5. -- ESTIMATED UTILIZATION OF NITROGEN (N), PHOSPHATE (P<sub>2</sub>O<sub>5</sub>), AND POTASH (K<sub>2</sub>O), BY CROPS AND GROUPS OF CROPS  
AND AS SEPARATE MATERIALS AND MIXTURES IN FISCAL YEAR 1951-52 <sup>1/</sup>

Crop	:	:	Estimated Percent N			:	:	Percent P <sub>2</sub> O <sub>5</sub>		:	:	Percent K <sub>2</sub> O	
	Total Tons	Percent of	Consumed in Form of			Total	Percent	Consumed in Form of		Total	Percent	Consumed in Form of	
	Nitrogen	Total U.S.	Separate	NH <sub>3</sub> for	:	Tons P <sub>2</sub> O <sub>5</sub>	P <sub>2</sub> O <sub>5</sub>	Separate	Mixed	Tons K <sub>2</sub> O	Required	Separate	Mixed
	:	Required	Solid	Direct	In Mixed	:	Required	Materials	Goods	:	in U.S.	Materials	Goods
:	:	:	Materials	Application:	Fertilizer:	:	in U.S.	:	:	:	:	:	:
Corn	405,827	29.7	47.9	12.2	39.9	487,100	22.3	12.4	87.6	380,340	24.6	6.5	93.5
Cotton	276,500	20.2	56.3	24.7	19.0	190,295	8.7	13.0	87.0	155,115	10.0	19.0	81.0
Soybeans	4,402	.3	--	--	100.0	29,858	1.4	1.6	98.4	30,075	1.9	--	100.0
Peanuts	5,370	.4	--	--	100.0	20,401	.9	3.3	96.7	19,878	1.3	9.7	90.3
Flax	1,425	.1	3.2	--	96.8	6,099	.3	0.6	99.4	3,350	.2	--	100.0
Wheat	102,583	7.5	42.4	7.8	49.8	229,421	10.5	26.4	73.6	142,560	9.2	3.4	96.6
Oats	78,876	5.8	45.5	0.7	53.8	202,781	9.3	13.2	86.8	135,071	8.7	3.3	96.7
Barley	19,247	1.4	53.0	19.5	27.5	27,787	1.3	27.0	73.0	14,172	.9	2.7	97.3
Rye	2,006	.2	7.4	--	92.6	7,182	.3	23.4	76.6	4,270	.3	--	--
Rice	21,673	1.6	53.8	34.5	11.7	7,436	.3	0.4	99.6	3,240	.2	0.4	99.6
Beans and Peas	3,569	.3	20.6	6.1	73.3	9,261	.4	15.2	84.8	3,810	.3	--	100.0
Cane (Sugar)	6,274	.5	11.9	64.5	23.6	1,495	.1	--	100.0	4,060	.3	50.0	50.0
Beets (Sugar)	11,307	.8	49.1	18.4	32.5	15,290	.7	40.6	59.4	3,600	.2	0.4	99.6
Potatoes (Irish)	35,205	2.6	9.2	3.8	87.0	54,749	2.5	5.3	94.7	57,606	3.7	1.9	98.1
Sweetpotatoes	5,293	.4	--	--	100.0	10,049	.5	--	100.0	10,144	.7	--	100.0
Vegetables (Fresh)	62,789	4.6	23.3	4.9	71.8	81,303	3.7	10.2	89.8	71,041	4.6	10.0	90.0
Vegetables (Processed)	37,262	2.7	8.0	1.5	90.5	46,880	2.2	2.1	97.9	41,757	2.7	4.4	95.6
Tobacco	31,656	2.3	27.9	--	72.1	80,390	3.7	5.9	94.1	75,439	4.9	11.4	88.6
Hay	35,967	2.6	23.5	1.5	75.0	204,306	9.4	51.8	48.2	107,200	6.9	10.0	90.0
Pasture	62,437	4.6	55.9	1.9	42.2	266,859	12.2	51.0	49.0	136,340	8.8	24.0	76.0
Tree Fruits (Deciduous)	34,100	2.5	36.7	10.5	52.8	14,712	.7	6.6	93.4	16,240	1.1	30.0	70.0
Tree Fruits (Citrus)	52,212	3.8	48.3	17.2	34.5	25,826	1.2	10.8	89.2	38,232	2.5	15.1	84.9
Bush and Berries	8,374	.6	46.0	17.7	36.3	5,336	.3	42.0	58.0	3,880	.3	--	100.0
Nuts	11,391	.8	48.4	18.6	33.0	8,614	.4	2.4	97.6	9,162	.6	0.9	99.1
Sorghum	5,655	.4	3.5	1.7	94.8	5,114	.2	0.2	99.8	3,040	.2	--	100.0
Cover Crops	8,431	.6	31.7	17.2	51.1	70,692	3.2	52.3	47.7	32,240	2.1	22.8	77.2
Miscellaneous	10,167	.7	7.8	--	92.2	30,061	1.4	66.5	33.5	12,006	.8	41.9	58.1
Vegetable Gardens	14,539	1.1	2.0	--	98.0	25,246	1.2	--	100.0	19,140	1.2	--	100.0
Non-Farm Use	11,954	.9	6.6	--	93.4	15,397	.7	21.6	78.4	12,390	.8	--	100.0
TOTAL	1,366,401	100.0	42.6	12.3	45.1	2,179,940	100.0	23.7	76.3	1,545,398	100.0	10.0	90.0

<sup>1/</sup> Data based on surveys conducted by the Mobilization Activities Branch (formerly the Office of Materials and Facilities)  
through the State PMA Committees, and adjusted to reported 1951-52 consumption.

